WHAT IS CLAIMED AND DESIRED TO BE SECURED BY LETTERS PATENT OF THE UNITED STATES IS:

1. An apparatus for parallel readout of patterns stored as data disk tracks on an optical disk, comprising:

means for simultaneously illuminating patterns stored in each of the disk super tracks on the optical disk with external data encoded in a light beam producing a reflection beam encoded with data products of the external data and the patterns; and

means for receiving and summing the data products encoded in the reflection beam for each disk track.

2. A data readout apparatus, comprising:

a laser illuminating device illuminating data bits of tracks of an optical disk with an input data modulated beam; and

an accumulator accumulating, in correspondence to the tracks, a beam reflected from the optical disk.

3. An apparatus for parallel readout of patterns stored as data in a plurality of disk tracks on an optical disk, said apparatus comprising:

a weight and modulated input data beam, encoded with external data and having a trapezoidal shape, and projected onto the optical disk as the optical disk rotates producing a reflection beam encoded with data products of the patterns and the external data; and

a receiving device, which receives the data products and sums the data products encoded in the reflection beam for each disk track.

4. The apparatus of Claim 3 further including:

a measuring device, coupled to said receiving device, for measuring the accumulated current associated with each pattern; and

a computing device, coupled to said measuring device, for determining which pattern has the highest correlation with external data.

5. The apparatus of Claim 3 further including:

a sign beam encoded with sign bits associated with the components of the external data which is projected onto the rotating optical disk to produce a sign reflected beam.

6. An apparatus for parallel readout of patterns with external data stored as data in disk tracks on an optical disk, comprising:

a laser beam generator generating a laser beam having an intensity;

a first modulator for modulating the intensity of the laser beam to produce a weight modulated laser beam;

a first lens for focusing the weight modulated laser beam;

a second modulator responsive to the weight modulated laser beam from the first lens and to the external data for modulating the weight modulated laser beam as a function of the external data;

a second lens for projecting the weighted and external data modulated laser beam as a trapezoidal shaped beam onto the optical disk, simultaneously producing data products of components of the patterns and the external data encoded in a reflected beam; and

a receiver array for detecting and summing the data products encoded in the reflected beam for each disk super track.

7. The apparatus of Claim 6 further including:

a measuring device, coupled to said receiving device, for measuring the accumulated current associated with each pattern; and

a computing device, coupled to said measuring device, for determining which pattern has the highest correlation with external data.

8. The apparatus of Claim 6 further including:

a third lens for focusing the reflected beam encoded with the data products onto said receiver array.

9. The apparatus of Claim 6 wherein said receiver array comprises:

a photodetector array for receiving the data products encoded in the reflected beam and producing charges based on the reflection beam;

accumulating devices coupled to said photodetector array for summing and storing the charge for each track; and

keeping track of whether the charge corresponds to positive or negative data.

10. The apparatus of Claim 6 wherein said patterns are vector components and said external data are vector components.

11. A method for parallel readout of patterns stored as data in disk tracks on an optical disk, said method comprising the steps:

simultaneously multiplying patterns stored in each of the disk super tracks on the optical disk with external data encoded in a light beam to produce a reflected beam encoded with data products;

detecting the data products encoded in the reflected beam for each disk track; and

summing the data products received from each disk track.

12. The method of Claim 11 further including the step of

calculating which pattern has the highest correlation with the external data.

13. A method of correlating data, said method comprising the steps of:

modulating a beam with input data;

reflecting the beam off of multiplied bits of an optical disk; and

accumulating the beam reflected from the disk as the disk rotates.

14. A method for parallel readout of patterns stored as data in disk tracks on an optical disk, said method comprising the steps of:

generating a laser beam having an intensity;

modulating the intensity of the laser beam with weight to produce a weight modulated laser beam;

modulating the weight modulated laser beam with external data to produce a weight and external data modulated laser beam;

shaping the weight and external data modulated laser beam to form a trapezoidal beam;

projecting the trapezoidal beam onto the optical disk, which is rotating, produces data products of the patterns and the external data encoded in a reflected beam;

detecting the data products encoded in the reflected beam for each disk track; and

accumulating the data products for each disk track.

15. The method of Claim 14 further including the step of:

calculating which pattern has the highest correlation with the external data.

16. An apparatus for parallel readout of patterns stored as data on an optical disk, said apparatus comprising:

a radial modulated input data beam, encoded with external data, and projected onto the optical disk as the optical disk rotates producing a reflected beam encoded with data products of the patterns and the external data; and

a receiving device receiving the reflected beam encoded with the data products.

17. An apparatus for parallel readout and correlation of patterns stored as data on an optical disk having a supertrack, said apparatus comprising:

a laser beam generator for generating a laser beam;

a first lens for focusing the laser beam;

a modulator responsive to the laser beam from the first lens and to the external data for modulating the laser beam as a function of the external data to produce a modulated input data beam;

a second lens for spreading the modulated input data beam to form a radial beam and projecting the radial beam onto the supertrack of the optical disk, and producing respective data products of each pattern and the external data encoded in a reflected beam; and

a receiving array for detecting respective data products of each pattern and external data encoded in the reflected beam and producing respective currents based on the respective data products.

18. The apparatus of Claim 17 further including:

a filtering device responsive to the respective currents from said receiving array for producing real and imaginary components of the respective currents;

a measuring device, coupled to said receiving device, for measuring the respective currents associated with each pattern; and

a computing device, coupled to said measuring device, for determining which pattern has the highest correlation with the external data.

19. A method for parallel readout and correlation of patterns stored as data in supertracks on an optical disk, said method comprising the steps of:

simultaneously multiplying patterns stored in each of the supertracks on the optical disks with external data encoded in a light beam to produce a reflected beam encoded with data products; and

detecting the data products encoded in the reflected beam for each supertrack.

20. A method for parallel readout and correlation of patterns stored as data in supertracks on an optical disk, said method comprising the steps of:

generating a laser beam;

modulating the laser beam with external data to produce a modulated input data beam;

shaping the modulated input data beam into a radial beam;

projecting the radial beam onto the optical disk to produce data products of the patterns and the external data encoded in a reflected beam; and

detecting the data products encoded in the reflected beam for each supertrack.

21. The method of Claim 20 further including the steps of:

filtering the DC components from the data products encoded in the reflected beam;

separating the AC components encoded in the reflected beam into a real component and an imaginary component; and

calculating which pattern has the highest correlation with the external data.